

Is *Tilia americana* L. valid?

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Is *T. americana* L. valid? The answer of Sargent is negative (Bot. Gaz. 66: 424-425, 1918), and is presented with the support of evidence that seems to be uncontrovertible. *T. glabra* Vent., favored by Sargent, is used now in the majority of works treating the flora of the Eastern States. Certain authors have used in turn Linnaeus' and Ventenat's binomials. Many rule out *T. americana* believing it to be *species multipla*.

The American Linden of Linnaeus is presented (Sp. Pl. 1: 514. 1753) in a publication which, translated, reads as follows:

T. americana—Linden with staminodes. Kalm

Linden with somewhat broad mucronate leaves. Gron.
virg. 58

Linden with very broad glabrous leaves resembling our
native kind. Pluk. mant. 181

Hab. in Virginia and Canada. A tree.

Sargent tells us (o.c., 424), "Kalm's specimen is not in the Linnean herbarium, and it is impossible to identify it from the description which applies as well to any one of the 3 species which Kalm may have seen. Indeed both *T. neglecta* and *T. heterophylla Michauxii* are more common in the part of the country which he visited than the tree which recent authors have called *T. americana*, and it is impossible to identify Kalm's plant."

So far as the writer knows Kalm mentions the American Linden once (Trav. N. Am. 1: 69. 1770) without describing it. The *locus classicus*, *ex* Kalm, is Philadelphia. This type-locality does not conflict with the habitat of the species, *ex* Linnaeus, and does not exclude the Linden known to Sargent as *T. glabra*.

Kalm's note applies to numerous species of *Tilia* in America, Europe and Asia, and it is undeniable that the presence or absence of the staminodes is not primarily a specific character. Gronovius polynomial is tantamount to *nomen nudum*, for it describes no Linden in particular. Plukenet's polynomial, however, is definite: it introduces a Linden with very broad *glabrous* leaves "from Maryland," which resembles one of the English species of *Tilia*. It is unfortunate that Sargent pays attention

to the statements of Kalm and Gronovius, but fails to comment on Plukenet's Linden which has *glabrous* leaves.

The European Lindens "with hexagonal fruit" of Plukenet are not directly mentioned by Linnaeus in the announcement of *T. europaea* (Sp. Pl. 1: 514. 1753) and of its "varieties." They appear, however, in cross reference for var. *delta* and *epsilon* (cf. Ray, Syn. Pl. Angl. 3: 473, nos. 3, 4, 1724). The former "variety" is doubtful, and it may be suspected that Linnaeus accepted it through Ray, o.c. l.c., from Merret (Pin. Rer. Nat. Brit. 118. 1667) for the sake of a well rounded record, which is not surprising to botanists familiar with the method and the practice of Linnaeus. Var. *epsilon* is undoubtedly *T. platyphyllos*. Plukenet describes it, in translation, as follows (Almag. Bot. 368. 1696), "Native wild Linden with broad hirsute leaves and a 4-5-6-angled fruit." It is quite probable that Plukenet had *T. platyphyllos* in mind comparing the Linden of Maryland with very broad glabrous leaves with the Linden of England with broad hairy leaves. Anyone familiar with the European and American Lindens must agree that the comparison between *T. platyphyllos* and the Linden known to Sargent as *T. glabra* is fundamentally a happy one. The American Linden with *glabrous* leaves is not the species which modern authors understand as *T. heterophylla*, *T. Michauxii* or *T. neglecta*. All these have more or less thickly *tomentose* leaves.

Sargent having underestimated Plukenet's note, lays stress upon Gronovius' meaningless polynomial, wishing it to be noted that a Linden from Clayton's region cannot be *T. americana*. Sargent, unfortunately, misses the point that a proof presented on grounds of habitat and phytogeography requires a rigorous definition of geographic areas and a precise understanding of ecology. In the case under consideration the Virginia of Gronovius and of Linnaeus has the same value as the Maryland¹ of Plukenet and the Canada of Linnaeus, and no

¹ Plukenet (Mant. 181 1700) spells *Terra Moriana*, undoubtedly a misprint instead of *Terra Mariana*. No reference is implied to *Terra Moriana* or *Moriana* (on modern maps Maurienne) in Savoy, France. The fruit of the American Linden is said by Plukenet (o.c.l.c.) to be "identical to the fruit of our (English) Lindens." The note is to be broadly interpreted, because the fruit of *T. americana* is usually smooth, and that of *T. platyphyllos* more or less evidently ribbed. Plukenet in all probability alludes to the like nature of the fruit of the two species.

one may decide, barring cogent evidence to the contrary, whether Gronovius meant the mountains or the coast of Virginia, or the mountains and the coast of a nearby State. The scanty value of colonial maps is well illustrated by the proceedings of the meetings in which the thirteen original States settled their boundaries among themselves and with the Federal Government.

In conclusion: the presentation of *T. americana* must be interpreted in the absence of a type-specimen. It rests, consequently upon textual evidence. Textual uncontroverted evidence in Plukenet's polynomial points to a Linden having broad *glabrous* leaves. This Linden has a northern range, from Virginia to Canada, and the *locus classicus*, in a narrow sense, is Philadelphia. Only the species that Sargent calls *T. glabra* (Man. Tr. N. Am. 733-734. 1922) answers this description and this range. It follows that *T. americana* is valid and rules out the later *T. glabra* Vent. To this extent the writer fully agrees with Suringar (Meded. Rij. Herb. Leid. 56: 28. 1928), whose understanding of *T. europaea* L., and "varieties," will be discussed in a coming article.

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